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Destiny

Lighting batteries to begin charging, followed by activation of the Lab interior lights. The Lab condensation (shell) heaters will be activated, and the survival heaters will be deactivated. The ground will also activate and check out much of the audio equipment in the Lab. The Control Moment Gyros will also be prepared for spinup, which will occur the following day.

Upon successful activation of the Lab, both the STS-98 crew and the Expedition One crewmembers will ingress the Lab on Flight Day 5 and begin the physical tasks associated with outfitting Destiny.

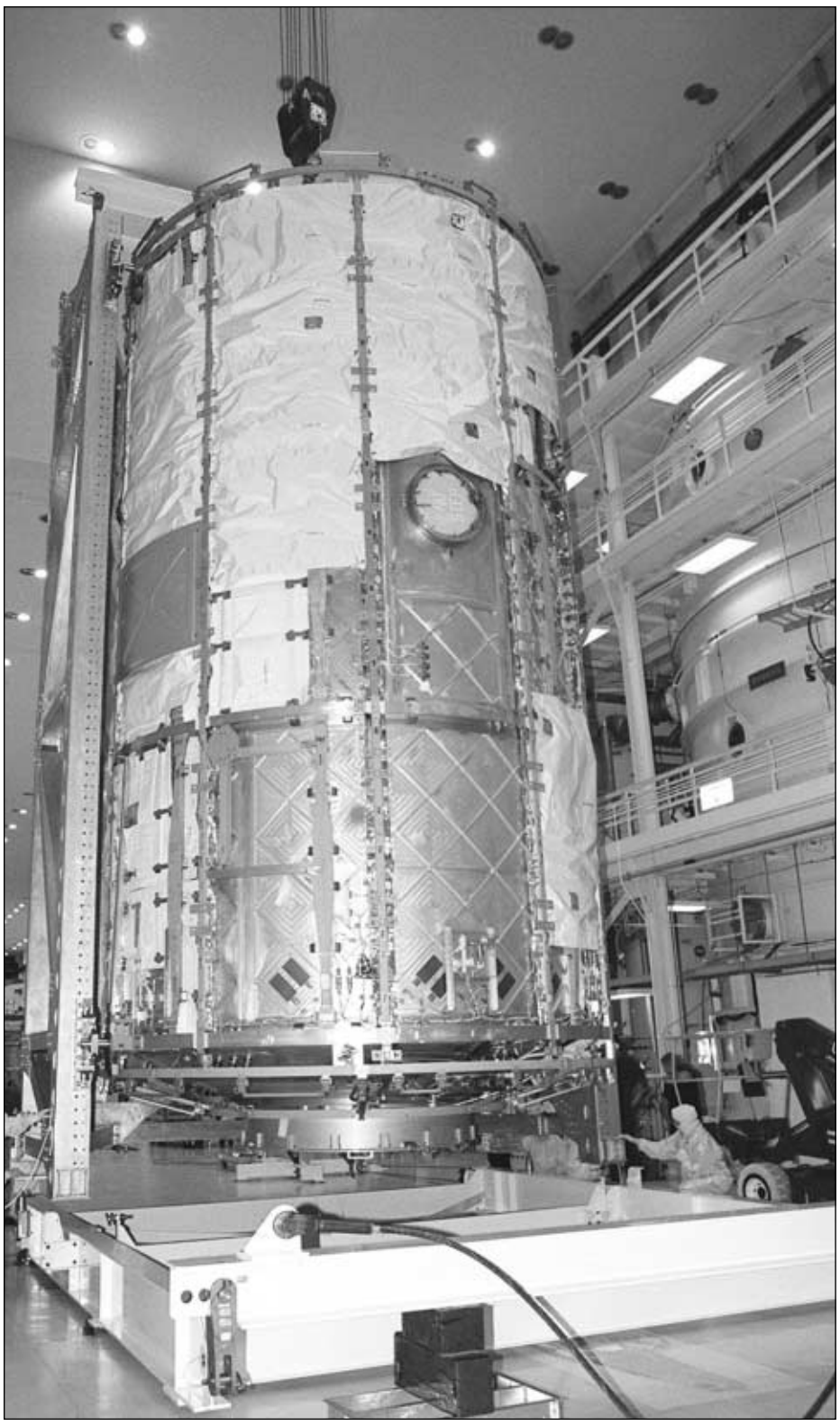
During the second space walk scheduled for Flight Day 6, PMA 2 will be relocated to the Lab forward port. The EVA crewmembers will then work together to remove the Lab Power Data Grapple Fixture (PDGF) from the orbiter sidewall and install the PDGF on the Lab. The PDGF will be used by the Space Station Remote Manipulator System, the new station robotic arm that will arrive on Mission 6A.

The third scheduled space walk will occur on Flight Day 8. Key activities planned include moving the spare S-Band Antenna Support Assembly from the orbiter to the ISS stowage site, installing the window shutter on the Lab and connecting PMA 2 umbilicals to the Lab.

The ISS crew and/or ground controllers will perform some activation and checkout tasks of the Lab after the orbiter crew ingress is complete. The ground will command a checkout of the Internal Video Distribution Subsystem Orbital Replacement Units (ORUs). As there is no video capability on this mission, this will be a functional checkout of the equipment to verify that it survived launch in good shape. The ground also will perform a health and status check of the Ku-band radio frequency group. Once again, this will be a health check of the ORUs because there will not be any Ku-band capability available until Mission 5A.1.

The ISS crew will inspect the wastewater tank in the Lab to verify that there are no leaks. Other activation procedures that will be performed by the ISS crew after the orbiter leaves include the activation and checkout of the water vent system, inhibiting the water vent system, and activation and checkout of the vacuum vent system. The ISS crew will also install a Pressure Control System extension duct to assist the flow of air through the PCA.

Atlantis and the five-member crew are slated for launch no earlier than Jan. 19 with landing at Kennedy Space Center set for no earlier than Jan. 29. ■



> ***"The scientific community has anxiously awaited the installation and activation of Destiny to begin a new era of long-duration, space-based research. Crewmembers and ground-based researchers will utilize the orbiting laboratory to expand our knowledge of biological and material processes, learn more about our planet and solar system and develop new commercial applications in space."***
>
> – Ven Feng, NASA increment payload manager

Destiny Science

The centerpiece of research on the International Space Station, the U.S. Destiny Laboratory will support experiments and studies that may lead to new answers to medical questions.

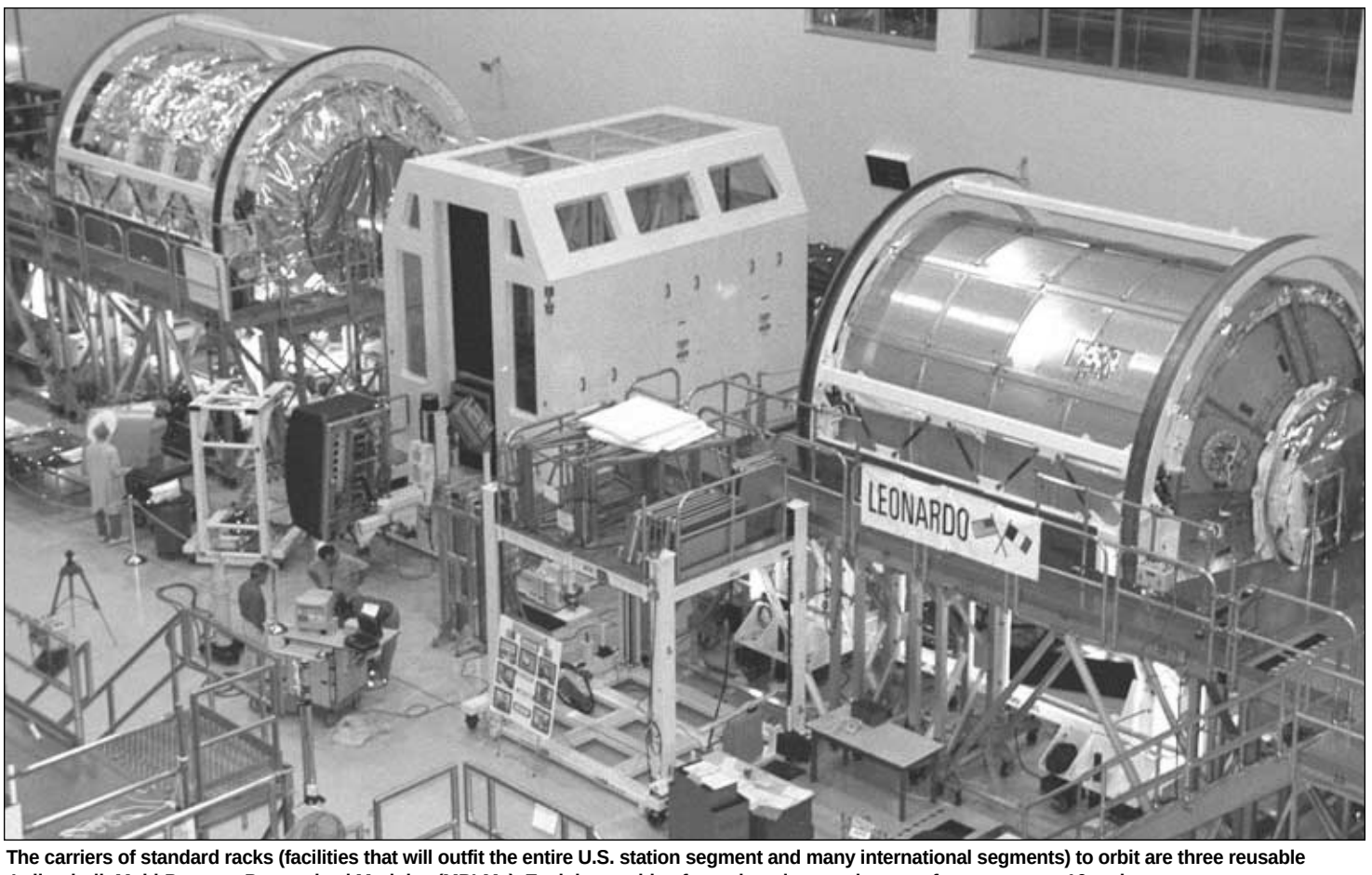
"The scientific community has anxiously awaited the installation and activation of Destiny to begin a new era of long-duration, space-based research," said Ven Feng, NASA increment payload manager. "Crewmembers and ground-based researchers will utilize the orbiting laboratory to expand our knowledge of biological and material processes, learn more about our planet and solar system and develop new commercial applications in space."

Destiny is the primary research laboratory for U.S. payloads. It will support experiments in microgravity research, human life science, fundamental biology and ecology, Earth observations, space science and commercial applications. By Flight 5A.1 (STS-102), the U.S. Lab will support Earth photography and the Human Research Facility in which radiation measurements, psychological evaluations, and neural response experiments will be conducted.

In 2002, shuttle flights will deliver the Minus-Eighty Laboratory Freezer for ISS, Microgravity Science Glovebox and Window Observational Research Facility. Eventually, Destiny can accommodate 13 payload racks with experiments in human life science, materials research, Earth observations and commercial applications. The results of these experiments will allow scientists to better understand our world and ourselves and prepare us for future missions to the Moon and Mars.

In the future, Destiny will be joined by laboratory modules sponsored by the National Space Development Agency of Japan, European Space Agency and Rosaviakosmos.

The Boeing Co. began construction of the 16-ton, state-of-the art research laboratory in 1995 at the Marshall Space Flight Center in Huntsville, Ala. The Lab was shipped to Kennedy Space Center in Florida in 1998. It was turned over to NASA for pre-launch preparations in August 2000.



The carriers of standard racks (facilities that will outfit the entire U.S. station segment and many international segments) to orbit are three reusable Italian-built Multi-Purpose Pressurized Modules (MPLMs). Each is capable of carrying nine metric tons of cargo—up to 16 racks.